03050103-020

(Sugar Creek)

General Description

Watershed 03050103-020 (formerly 03050103-028) is located in York and Lancaster Counties and consists primarily of ***Sugar Creek*** and its tributaries. The watershed occupies 29,206 acres of the Piedmont region of South Carolina. The predominant soil types consist of an association of the Cecil-Hiwassee-Mecklenburg-Iredell series. The erodibility of the soil (K) averages 0.27; the slope of the terrain averages 10%, with a range of 2-25%. Land use/land cover in the watershed includes: 73.4% forested land, 12.4% agricultural land, 7.2% scrub/shrub land, 4.5% urban land, 1.0% water, and 1.5% barren land.

Sugar Creek originates in North Carolina, near the City of Charlotte, and accepts drainage from Flint Hill Branch, Little Sugar Creek, and McAlpine Creek before reaching Steele Creek. Steele Creek also originates in North Carolina and accepts drainage from Blankmanship Branch and Jackson Branch before flowing through the Town of Fort Mill and into Sugar Creek. There are several lakes and ponds (Lake Patricia and Lake Haigler) near the Town of Fort Mill (totaling 81.6 acres) used for irrigation and recreation, and a total of 44.6 stream miles in this watershed, all classified FW.

Water Quality

Station #	Type	Class	Description
CW-247	W	FW	SUGAR CREEK AT MECKLENBURG CO ROAD 51 (IN N.C.)
CW-248	W	FW	LITTLE SUGAR CREEK AT US 521 (IN N.C.)
CW-246	W/BIO	FW	SUGAR CREEK UPSTREAM OF CONFLUENCE WITH MCALPINE CREEK
CW-226	P	FW	MCALPINE CREEK AT US 521 IN NC
CW-064	S/BIO	FW	MCALPINE CREEK AT S-29-64
CW-009	S	FW	STEELE CREEK AT S-46-22 N OF FORT MILL
CW-203	W	FW	STEELE CREEK AT S-46-98
CW-681	BIO	FW	STEELE CREEK AT BY-PASS US 21
CW-011	S	FW	STEELE CREEK AT S-46-270
CW-013	P	FW	SUGAR CREEK AT SC 160 E OF FORT MILL
CW-036	S	FW	SUGAR CREEK AT S-46-36

Sugar Creek - There are four monitoring sites along Sugar Creek. Above Little Sugar Creek ***(CW-247 in North Carolina)***, aquatic life uses are not supported due to occurrences of cadmium in excess of the aquatic life acute standards. Recreational uses are partially supported due to fecal coliform bacteria excursions. Downstream of Little Sugar Creek ***(CW-246)***, aquatic life uses are partially supported based on macroinvertebrate community data. Recreational uses are not supported due to fecal coliform bacteria excursions.

Aquatic life uses are not supported downstream of Steele Creek ***(CW-013)***, due to occurrences of chromium and copper in excess of the aquatic life acute standards, compounded by a significant increasing trend in total phosphorus concentrations and a significant decreasing trend in pH. A significant increasing trend in dissolved oxygen concentration and a significant decreasing trend in five-day biochemical oxygen demand suggest improving conditions for these parameters. A high concentration of chromium was

measured in the 1994 sediment sample, and very high concentrations were measured in the 1996 and 1998 samples. Recreational uses are not supported due to fecal coliform bacteria excursions. Aquatic life uses are fully supported at the furthest downstream site ***(CW-036)***, but recreational uses are not supported due to fecal coliform bacteria excursions.

Little Sugar Creek (CW-248) - This site is located just north of the South Carolina/North Carolina state line. Aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions.

McAlpine Creek - There are two monitoring sites along McAlpine Creek. At the upstream site (***CW-226***, in North Carolina), aquatic life uses are fully supported; however there are significant increasing trends in five-day biochemical oxygen demand and total phosphorus concentrations. There is a significant decreasing trend in pH. In sediment, chromium was very high in the 1994, 1996, 1997, and 1998 samples. Aquatic life uses are not supported at the downstream site ***(CW-064)*** based on macroinvertebrate community data. Recreational uses are not supported at either site due to fecal coliform bacteria excursions, compounded by significant increasing trends in fecal coliform bacteria concentrations.

Steele Creek - There are four monitoring sites along Steele Creek. At the furthest upstream site ***(CW-009)***, aquatic life uses are fully supported. There is a significant decreasing trend in pH. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are not supported due to fecal coliform bacteria excursions. At the next site downstream ***(CW-203)***, aquatic life uses are fully supported, but recreational uses are not supported due to fecal coliform bacteria excursions.

Further downstream ***(CW-681)***, aquatic life uses are partially supported based on macroinvertebrate community data. At the furthest downstream site ***(CW-011)***, aquatic life uses are fully supported. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are partially supported at this site due to fecal coliform bacteria excursions.

NPDES Program

Active NPDES Facilities

RECEIVING STREAM	***NPDES#***
FACILITY NAME	***TYPE***
PERMITTED FLOW @ PIPE (MGD)	***LIMITATION***
COMMENT	
SUGAR CREEK	SC0027146
UTILS. OF SC/FOXWOOD	MINOR DOMESTIC
PIPE #: 001 FLOW: 0.12	EFFLUENT
SUGAR CREEK TRIBUTARY	SC0022799
P. KAUFMANN INC.	MINOR INDUSTRIAL
PIPE #: 001 FLOW: 0.002	WATER QUALITY

WQL FOR BOD_5, NH3-N, TRC, DO

SUGAR CREEK TRIBUTARY — SC0035033
INDIANLAND SCHOOL WWTP — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.03 — WATER QUALITY
WQL FOR BOD_5, NH3-N, TRC, DO

SUGAR CREEK TRIBUTARY — SC0038563
FAITH TEMPLE BINGO — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.006 — WATER QUALITY
WQL FOR NH3-N, TRC, DO

DITCH TO SUGAR CREEK — SCG250094
WIKOFF COLOR CORP./WWTP — MINOR INDUSTRIAL
PIPE #: 001 FLOW: M/R — EFFLUENT

FLINT HILL BRANCH — SC0031208
TWIN LAKES MOBILE ESTATES — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.0625 — WATER QUALITY
WQL FOR BOD_5, NH3-N, TRC, DO

MCALPINE CREEK — SC0030112
CWS/LAMPLIGHTER VILLAGE SD — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.63 — WATER QUALITY
WQL FOR BOD_5, NH3-N, TRC, DO

STEELE CREEK — SC0024759
PINELAKES CAMPGROUND — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.038 — WATER QUALITY
WQL FOR NH3-N, TRC,DO

STEELE CREEK — SC0031151
PINECREST MHP — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.012 — EFFLUENT

JACKSON BRANCH — SC0041483
MACO COM. PRK/TARA PLANTATION — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.01 — WATER QUALITY
WQL FOR BOD_5, NH3-N, TRC, DO

JACKSON BRANCH TRIBUTARY — SC0038113
UTILS. OF SC/CAROWOOD SD. — MINOR DOMESTIC
PIPE #: 001 FLOW: 0.02 — WATER QUALITY
WQL FOR NH3-N, TRC, DO

Nonpoint Source Management Program

Mining Activities

MINING COMPANY — ***PERMIT #***
MINE NAME — ***MINERAL***

COMMENTS

CBM LANDFILL COMPANY	1094-91
CBM LANDFILL MINE	SAND/CLAY

Land Disposal Activities

Landfill Facilities

SOLID WASTE LANDFILL NAME ***FACILITY TYPE***	***PERMIT #*** ***STATUS***
COOKS SHORT-TERM C&D	291004-1301 (IWP-204)
CONSTRUCTION	----------
CONTAINER CORPORATION OF CAROLINA	463323-6001
INDUSTRIAL	--------
JOHN HOWARD LANDFILL	IWP-229
INDUSTRIAL	--------
SAM FISCHER LANDFILL	IWP-207
INDUSTRIAL	--------
CUTSHAW LANDFILL	462425-1201 (CWP-005)
CONSTRUCTION	--------
COLTHARP LANDFILL	462602-1201
CONSTRUCTION	ACTIVE

Land Application Sites

LAND APPLICATION SYSTEM ***FACILITY NAME***	***ND#*** ***TYPE***
SPRAYFIELD	ND0067105
LAZY DAZE CAMPGROUND	DOMESTIC

Groundwater Contamination

The groundwater in the vicinity of the property owned by Ft. Mill 66 (#09317) is contaminated with petroleum products from leaking underground storage tanks. The contamination plume is discharging to a tributary of Blankmanship Branch.

Growth Potential

This watershed contains a portion of the Town of Fort Mill and rapidly growing residential areas near I-77 in the Fort Mill Township. Major development factors include the Paramount Carowinds amusement park and surrounding industrial park area, and the Charlotte Knights baseball stadium. Industrial growth is expected surrounding the U.S. Hwy. 521/S.C. Hwy. 160 interchange. Water service is present in all sections of the watershed, except for some area east of Fort Mill. Sewer service is present in Fort Mill and surrounding areas. The new Steele Creek sewer line has eliminated the smaller treatment plants and will open the area for denser development. The presence of the expanding Charlotte urban area just across the State line and the easy access via I-77 result in a strong growth trend, which should continue

into the near future. Transportation factors which will have an impact on the area include the in-progess widening of I-77, a proposed Fort Mill bypass for S.C. Hwy. 160, and a connector being constructed between the Heritage retreat and Mecklenburg County, N.C.

Watershed Protection and Restoration

Special Projects

NPS Assessment and TMDL for Phosphorus in the Catawba River Basin

SCDHEC has contracted with the University of South Carolina to quantify relationships between land use and water quality in the Catawba River Basin. The project will evaluate these relationships using the WARMF model, which will be used to develop a TMDL for total phosphorus in Fishing Creek Reservoir, Cedar Creek Reservoir, and Lake Wateree. The TMDL is being developed in cooperation with the North Carolina Division of Water Quality and will involve stakeholders in the basin. Additional information about the TMDL development process can be found in Appendix B.